

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

and education sectors are reopening, and countries are benefiting from the experiences of others as they continue to live with the COVID-19 pandemic and develop more effective control strategies.

We are all members of the WHO Strategic and Technical Advisory Group for Infectious Hazards and declare no competing interests.

Juliet Bedford, Delia Enria, Johan Giesecke, \*David L Heymann, Chikwe Ihekweazu, Gary Kobinger, H Clifford Lane, Ziad A Memish, Myoung-don Oh, Amadou Alpha Sall, Kumnuan Ungchusak, Lothar H Wieler, for the WHO Strategic and Technical Advisory Group for Infectious Hazards

## david.heymann@lshtm.ac.uk

Anthrologica, Oxfordshire, UK (JB); Instituto Nacional de Enfermedades Virales Humanas "Julio Maiztequi" and CCWHO-OPS on Viral Haemorrhagic Fevers and Arboviruses, Buenos Aires, Argentina (DE); Karolinska Institute, Stockholm, Sweden (JG); Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, London WC1E 7HT, UK (DLH); Nigeria Centre for Disease Control, Abuia, Nigeria (CI): Infectious Disease Research Centre, Université Laval, Faculty of Medicine, Québec City, QC, Canada (GK); National Institute of Allergy and Infectious Diseases, Bethesda, MD, USA (HCL); Research and Innovation Center, King Saud Medical City, Ministry of Health, Riyadh, Saudi Arabia (ZAM); JW Lee Center for Global Medicine, SNU College of Medicine, Department of Internal Medicine, Seoul National University Hospital, Seoul, South Korea (M-dO); Institut Pasteur de Dakar, Dakar, Senegal (AAS); Ministry of Health, Department of Diseases Control, Bangkok, Thailand (KU); and Robert Koch Institute, Berlin, Germany (LHW)

- WHO. WHO coronavirus disease (COVID-19) dashboard. 2020. https://covid19.who.int/ (accessed Oct 1, 2020).
- WHO. Coronavirus disease (COVID-19) weekly epidemiological update and weekly operational update. 2020. https://www.who.int/emergencies/ diseases/novel-coronavirus-2019/situation-reports/ (accessed
- Usher Network for COVID-19 Evidence Reviews (UNCOVER). Summary: what is the evidence for transmission of COVID-19 by children [or in schools]? July, 2020. https://www.ed.ac.uk/files/atoms/files/uncover\_  $children\_transmission\_of\_sars\text{-}cov\text{-}2\_update\_4\_final.pdf (accessed)$ Oct 1, 2020)

- To KK, Hung IF, Ip JD, et al. COVID-19 re-infection by a phylogenetically distinct SARS-coronavirus-2 strain confirmed by whole genome sequencing. Clin Infect Dis 2020; published online Aug 25. https://doi.org/ 10.1093/cid/ciaa1275.
- Tillett R, Sevinsky J, Hartley P, et al. Genomic evidence for a case of reinfection with SARS-CoV-2. SSRN 2020; published online Aug 25. http://dx.doi.org/10.2139/ssrn.3680955 (preprint).
- Furuse Y, Sando E, Tsuchiya N, et al. Clusters of coronavirus disease in communities, Japan, January-April 2020. Emerg Infect Dis 2020;
- WHO. WHO COVID-19 strategic preparedness and response plan. 2020. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/ strategies-and-plans (accessed Oct 1, 2020).
- WHO. Country and technical guidance—coronavirus disease (COVID-19). 2020. https://www.who.int/emergencies/diseases/novelcoronavirus-2019/technical-guidance (accessed Oct 1, 2020).
- WHO. Operational considerations for COVID-19 surveillance using GISRS: interim guidance. March 26, 2020. https://www.who.int/publications/i/ item/operational-considerations-for-covid-19-surveillance-using-gisrsinterim-quidance (accessed Oct 1, 2020).
- WHO. Coronavirus disease (COVID-19) technical guidance: the Unity Studies: early investigation protocols. 2020. https://www.who.int/ emergencies/diseases/novel-coronavirus-2019/technical-guidance/earlyinvestigations\_(accessed Oct 1, 2020).
- McAloon C, Collins Á, Hunt K, et al. Incubation period of COVID-19: a rapid systematic review and meta-analysis of observational research. BMJ Open 2020; 10: e039652
- WHO. COVAX. COVAX, the Act-Accelerator vaccine pillar. 2020. https://www.who.int/publications/m/item/covax-the-act-acceleratorvaccines-pillar (accessed Oct 1, 2020)
- WHO. Corticosteroids for COVID-19. Sept 2, 2020. https://www.who.int/ publications/i/item/WHO-2019-nCoV-Corticosteroids-2020.1 (accessed Oct 1, 2020).
- WHO. WHO International clinical trials registry platform. 2020. https://www.who.int/ictrp/en/ (accessed Oct 1, 2020).
- WHO. Coronavirus disease (COVID-19) pandemic—Emergency Use Listing Procedure (EUL) open for in vitro diagnostics. 2020. https://www.who.int/ diagnostics\_laboratory/EUL/en/ (accessed Oct 1, 2020).
- WHO. Global partnership to make available 120 million affordable, quality COVID-19 rapid tests for low- and middle-income countries. Sept 28, 2020. https://www.who.int/news-room/detail/28-09-2020global-partnership-to-make-available-120-million-affordable-qualitycovid-19-rapid-tests-for-low--and-middle-income-countries (accessed Oct 1, 2020).



## (I) The opioid crisis and the 2020 US election: crossroads for a national epidemic

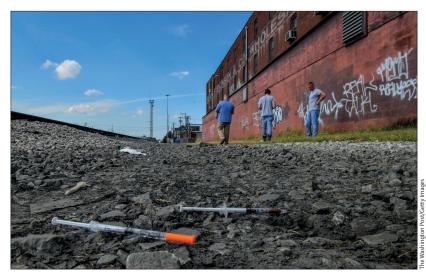
Published Online October 6, 2020 https://doi.org/10.1016/ 50140-6736(20)32113-9 Health care is a major point of differentiation in the upcoming US presidential elections. One priority area is the opioid crisis. In 2019, reported deaths from drug overdose in the USA reached an all-time high of almost 72 000, with opioids involved in more than two-thirds of the total deaths.1 The COVID-19 pandemic has exacerbated an already difficult situation by reducing access to lifesaving treatment, harm reduction, and recovery support services, while increased stress and isolation might increase the risk of addiction and substance use disorders (SUDs).2 As of July, 2020, deaths from drug overdose in the USA rose by an estimated 13% in the first half of the year compared with 2019, according to data compiled from several local and state governments. In some states, drug-related deaths climbed by over 30%.3 The pandemic has also triggered an economic recession that threatens the survival of some addiction treatment centres,4 and is expected to exacerbate social barriers such as housing instability, which can further hinder treatment of SUDs.5 Against this backdrop, the presidential candidates propose divergent policy solutions to counter the opioid epidemic. There are three major differences.

First, the policy proposals differ in how they will treat addiction. Just one in five people with opioid use

disorder in the USA are able to access treatment at the time they need it, and fewer than half of community health centres in the country have the capacity to provide medication-assisted treatment (MAT).6 Medicaid expansion through the Affordable Care Act (ACA) has been instrumental in increasing coverage of mental health and SUD services.7 Nationally, Medicaid expansion was associated with a 6% reduction in total deaths from opioid overdoses in states that underwent expansion compared to non-expansion states.8 In West Virginia, the state with the highest rate of deaths from opioid-involved overdose as of 2018,9 buprenorphine prescriptions for patients with opioid use disorder increased by an estimated 42% between 2014, when Medicaid was first expanded in the state, and 2016.10 Treatments with buprenorphine and methadone were associated with 38% and 59% decreases in opioid-related mortality, respectively, according to one study in Massachusetts; all forms of MAT should be made accessible.11

US President Donald Trump has repeatedly called for the repeal of the ACA, which would roll back Medicaid expansion.<sup>12</sup> Repeal of the ACA would not only cause millions of Americans to lose their health insurance coverage, but it would also eliminate the coverage of SUDs under essential health benefits, making treatment unaffordable even to insured Americans. As a result, people on SUD treatment could suffer from withdrawal or resort to alternative methods of obtaining opioids such as heroin or street fentanyl, resulting in increased overdose deaths. By contrast, the Democratic Party presidential candidate, Joe Biden, has proposed an expansion of the ACA to "achieve universal coverage" and accelerated integration of SUDs into standard health-care practice under Medicare, the Indian Health Service, the Veterans Health Administration, and other health plans.13

Second, the candidates' proposals will determine the strength and capacity of the nation's public health infrastructure to curb the opioid crisis. Public health infrastructure to prevent and treat addiction has been chronically underdeveloped and underfunded in the USA. <sup>14</sup> In October, 2017, Trump declared the opioid crisis a public health emergency. However, the current administration's budget proposal that year included a 95% cut to the central coordinating entity for the federal government's response, the Office of National Drug Control Policy, although this cut was not ultimately implemented. <sup>15</sup>



In 2018, the Trump administration secured US\$6 billion to address opioid use disorder over 2 years through the Initiative to Stop Opioid Abuse. 16 This represented an additional \$5 billion to the \$500 million distributed to states in 2017 to prevent and treat opioid use disorder, and another \$500 million was allocated to drug addiction through the 2018 budget, 17 although the impact of this funding remains to be seen as overdose deaths have increased into 2020.1

Public health experts have warned that the funding in Trump's Initiative to Stop Opioid Abuse is insufficient to turn the tide, and have called for tens of billions of dollars for the prevention and treatment of opioid use disorder.<sup>18</sup> The Comprehensive Addiction Resources Emergency (CARE) Act of 2019, a monumental piece of legislation that was introduced in 2019 and remains in the introductory stages at the House of Representatives, proposes \$10 billion per year in federal funding to address the opioid crisis.<sup>19</sup> This legislation would target funds to counties and cities hardest hit by the opioid crisis, reflecting the importance of funding that is sustained and proportional to the severity of the epidemic.<sup>20</sup> Aligned with these recommendations, Biden's campaign has proposed a \$125 billion federal investment in prevention, treatment, and recovery services over the next 10 years, with 60% of funds distributed in the form of flexible grants to state and local communities.13

Third, the coming election will determine whether SUDs and overdose will be treated as diseases, rather than as moral failings or crimes. Addiction is a complex brain

disease. Studies have shown that the criminalisation of SUDs is ineffective and harmful,21 diverting attention away from treatment and prevention. Moreover, drugrelated arrests and incarceration disproportionally impact people of colour with long-term consequences that perpetuate health inequities.22 One focus of Trump's plan to address the opioid crisis is the reduction of illicit drug supply; he endorses policies to secure ports of entry and land borders, such as through investment in a US-Mexico border wall, increasingly stringent criminal penalties for dealing and trafficking opioids, and institution of the death penalty for drug traffickers. 16 While Biden's plan also targets drug supply by attempting to reduce the overprescribing of addictive pain medications, it proposes to end incarceration for drug use alone with diversion to drug courts and treatment, and supports investment in partnerships with mental health specialists and social workers, in addition to resources to address social barriers to recovery like housing instability.13

On the cusp of the presidential election and in the midst of the COVID-19 pandemic, the nation finds itself at a crossroads with a crucial opportunity to decide the trajectory of the opioid crisis. Will the nation's next leader continue to fall short and tinker around the edges while many tens of thousands die, or will he commit to urgent, robust, and science-based action? The consequences of this decision will persist for generations to come.

LSW is an unpaid member of the advisory committee of the non-profit organisation Shatterproof and receives advisory board fees from Behavioral Health Group, a company with a network of outpatient opioid treatment and recovery centres in the USA. NBS declares no competing interests.

## \*Leana S Wen, Nakisa B Sadeghi lwen@gwu.edu

George Washington University Milken Institute School of Public Health, Washington, DC 20052, USA (LSW); and University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC, USA (NBS)

- 1 US Centers for Disease Control and Prevention. Vital statistics rapid release; provisional drug overdose death counts. Sept 16, 2020. https://www.cdc. gov/nchs/nvss/vsrr/drug-overdose-data.htm (accessed Sept 22, 2020).
- 2 Associated Press. Virus outbreak creates new challenges for addiction recovery. Los Angeles Times, April 1, 2020.
- 3 Katz J, Goodnough A, Sanger-Katz M. In shadow of pandemic, US drug overdose deaths resurge to record. The New York Times, July 15, 2020.

- Sokolow A. Opioid overdoses have skyrocketed amid the coronavirus, but states are nevertheless slashing addiction treatment program budgets. Stat News, July 16, 2020. https://www.statnews.com/2020/07/16/opioidoverdoses-have-skyrocketed-amid-the-coronavirus-but-states-arenevertheless-slashing-addiction-treatment-program-budgets/ (accessed Sept 30, 2020).
- Yamamoto A, Needleman J, Gelberg L, et al. Association between homelessness and opioid overdose and opioid-related hospital admissions/ emergency department visits. Soc Sci Med 2019; 242: 112585.
- 6 Corallo B, Tolbert J, Sharac J, et al. Community health centers and medication-assisted treatment for opioid use disorder. Kaiser Family Foundation, Aug 14, 2020. https://www.klfi.org/report-section/ community-health-centers-and-medication-assisted-treatment-foropioid-use-disorder-issue-brief/ (accessed Sept 22, 2020).
- 7 Wen LS, Behrle EB, Tsai AC. Evaluating the impact of Affordable Care Act repeal on America's opioid epidemic. PLoS Med 2017; 14: e1002380.
- Kravitz-Wirtz N, Davis CS, Ponicki WR, et al. Association of Medicaid expansion with opioid overdose mortality in the United States. JAMA 2020; 3: e1919066.
- 9 National Institute on Drug Abuse. Opioid summaries by state. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state (accessed Oct 1, 2020).
- 10 Saloner B, Landis R, Stein BD, Barry CL. The Affordable Care Act in the heart of the opioid crisis: evidence from West Virginia. Health Aff (Millwood) 2019; 38: 633-42.
- 11 Larochelle MR, Bernson D, Land T, et al. Medication for opioid use disorder after nonfatal opioid overdose and association with mortality. Ann Intern Med 2018; 169: 137–45.
- 12 Katkov M. Obamacare must "fall," Trump administration tells Supreme Court. The Washington Post, June 26, 2020.
- 13 Biden Harris. The Biden Plan to End the Opioid Crisis. 2020. https://joebiden. com/opioidcrisis/ (accessed Sept 22, 2020).
- 14 Trust for America's Health. The impact of chronic underfunding on America's public health system: trends, risks, and recommendations, 2020. April, 2020. https://www.tfah.org/report-details/publichealthfunding2020/(accessed Sept 30, 2020).
- 15 Rappeport A. White House proposes cutting drug control office funding by 95%. The New York Times, May 5, 2017.
- 16 White House. President Donald J. Trump's Initiative to Stop Opioid Abuse and reduce drug supply and demand. Oct 24, 2018. https://www. whitehouse.gov/briefings-statements/president-donald-j-trumpsinitiative-stop-opioid-abuse-reduce-drug-supply-demand-2/ (accessed Sept 22, 2020).
- 17 Office of Management and Budget, US Government. An American budget. fiscal year 2019. https://www.whitehouse.gov/wp-content/uploads/2018/ 02/budget-fy2019.pdf (accessed Sept 30, 2020).
- 18 Goodnough A. \$45 billion to fight opioid abuse? That's much too little, experts say. The New York Times, June 30, 2017.
- 19 House Committee on Oversight and Reform. Cummings and Warren introduce landmark legislation to combat opioid epidemic. May 8, 2019. https://oversight.house.gov/news/press-releases/cummings-and-warrenintroduce-landmark-legislation-to-combat-opioid-epidemic (accessed Sept 22, 2020).
- 20 Wen L. We must provide sustained funding proportional to the severity of the opioid epidemic. The Hill, Sept 9, 2018. https://thehill.com/opinion/ healthcare/405415-we-must-provide-sustained-funding-proportional-tothe-severity-of-the (accessed Sept 25, 2020).
- 21 Joudrey PJ, Khan MR, Wang EA, et al. A conceptual model for understanding post-release opioid-related overdose risk. Addict Sci Clin Pract 2019; 14: 17.
- Ferrer B, Connolly JM. Racial inequities in drug arrests: treatment in lieu of and after incarceration. Am J Public Health 2018; 108: 968–69.